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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/696,813	10/25/2000	Apostolos Voutsas	SLA 0468	3618

7590 07/30/2003

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EXAMINER

NGUYEN, KHIEM D

ART UNIT PAPER NUMBER

2823

DATE MAILED: 07/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/696,813

Applicant(s)

VOUTSAS ET AL.

Examiner

Khiem D Nguyen

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-- Th MAILING DATE of this communication appears on the cov r sheet with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 12 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 12 and 20-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

In view of the arguments presented in the Appeal Brief filed January 27, 2003, paper No. 11, prosecution on the merits is reopened to address the issues raised in the Brief. The grounds of rejections in the prior Office actions are withdrawn, and new grounds of rejection are presented here. 37 CFR 1.193 (b)(2) applies:

(2) Where prosecution is reopened by the primary examiner after an appeal or reply brief has been filed, appellant must exercise one of the following two options to avoid abandonment of the application:

(i) File a reply under § 1.111, if the Office action is not final, or a reply under § 1.113, if the Office action is final; or

(ii) Request reinstatement of the appeal. If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (§ § 1.130, 1.131 or 1.132) or other evidence are permitted.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 and 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Zhang et al. (U.S. Patent 5,569,610).

In re claims 1 and 22, Zhang discloses a method of fabricating a polysilicon film, comprising the steps of:

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providing a substrate (FIG. 1A, 10);

depositing an amorphous silicon film (FIG. 1A, 12) on the substrate by the process of physical vapor deposition (col. 2, line 65 to col. 3, line 10);

introducing a metal catalyst to the amorphous silicon film (col. 3, lines 54-66 and col. 6, lines 54-64); and

annealing the amorphous silicon film to form a crystallized region by pure metal induced crystallization (col. 5, lines 27-39 and col. 6, line 65 to col. 7, line 10).

In re claim 2, Zhang discloses irradiating the crystallized region with an excimer laser after the step of annealing the amorphous silicon film (col. 6, line 65 to col. 7, line 10).

In re claim 3, Zhang discloses the step of fabricating a thin film transistor in the crystallized region (col. 1, lines 48-59 and col. 3, lines 18-30).

In re claim 4, Zhang discloses the step of utilizing the crystallized region in a liquid crystal display (col. 1, lines 48-59).

In re claim 21, Zhang discloses wherein the metal catalyst is chosen from the group consisting of nickel, cobalt, and palladium (col. 2, line 65 to col. 3, line 40)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 5-8, 12, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al. (U.S. Patent 5,569,610) as applied to claim 1-4 and 21-22 above, and further in view of Venkatesan et al. (U.S. Patent 5,371,382) and the applicant's admitted prior art (AAPA).

In re claims 5 and 6, Zhang fails to explicitly disclose wherein the amorphous silicon film is deposited using Argon as a sputtering gas, Venkatesan discloses a method in which an amorphous silicon film is formed by sputtering using Argon gas (col. 6, lines 5-20). It would have been obvious to one of ordinary skill in the art of making semiconductor devices to combine the teaching of Zhang and Venkatesan to enable the amorphous silicon film of Zhang to be formed and furthermore to obtain the amorphous silicon film having uniform concentration (col. 6, lines 25-30).

In re claim 12, Zhang discloses introducing metal catalyst into the amorphous silicon film but fails to disclose the introduction of metal catalyst into the amorphous silicon film is done through a barrier layer having window, AAPA discloses a method of fabricating a poly-silicon film in which the metal catalyst is introduced into an amorphous silicon film through a barrier layer having window (page 3 of the Background of the Invention). It would have been obvious to one of ordinary skill in the art of making semiconductor devices to incorporate AAPA's teaching into Zhang's method to introduce the metal catalyst into the amorphous silicon film through a barrier layer having window because that allows the formation of TFT devices (page 3 of the Background of the Invention).

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In re claims 5-8 and 20, there is no evidence indicating that the ranges of the Argon content in the amorphous silicon film and in the crystallized region, the annealing temperature and time duration, and the front length of a crystallization growth produces in the annealing step are critical and it has been held that it is not inventive to discover the optimum or workable ranges of a result-effective variable within given prior art conditions by routine experimentation. See MPEP 2144.05. Note that the specification contains no disclosure of either the critical nature of the claimed dimensions of any unexpected results arising there from. Where patentability is aid to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khiem D Nguyen whose telephone number is (703) 306-0210. The examiner can normally be reached on Monday-Friday (8:00 AM - 5:00 PM).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (703) 306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-9179 for regular communications and (703) 746-9179 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

K.N.

July 25, 2003


Olik Chaudhuri
Supervisory Patent Examiner
Technology Center 2800